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Crypto Revolution in India: Unveiling Influential Forces and Consumer Perception's Mediating Role in the Fiat Frontier Shift

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Abstract: This study examines the factors influencing the probability for cryptocurrency to be replaced by fiat currency. A total of 460 respondents from diverse backgrounds were selected for this purpose. The papers applied statistical tools like Factor Analysis, ANOVA, and descriptive study to derive the meaningful objectives. The study findings suggest that the majority of respondents consider cryptocurrencies to be hazardous and steer clear of using them unless they are very financially literate and live in a region that supports blockchain technology and the financial products that are developed from it.

Keywords: Cryptocurrency; Fiat currency; Factor Analysis; Consumer satisfaction; Consumer Perception

1 Introduction

Recent technological advances have resulted in the emergence of digital finance, which has transformed payment systems and financial services. Electronic currency was developed in the 1980s; nevertheless, it did not regulate digital currencies until 2017 owing to the common opinion that this monetary system was insecure. Cryptocurrency has arisen as decentralized digital assets that threaten established financial institutions, and the growth of FinTech businesses, mobile banking, and digital payment platforms have transformed the way financial services are accessed and delivered in the nation¹.

Due to uncertainty and distrust in banks during the 2008 global financial crisis, cryptocurrency acquired significant appeal. It has brought about significant changes in the financial system, including the way consumers conduct transactions and invest their money. Cryptocurrencies provide a high level of anonymity and security since transactions are recorded on a decentralized blockchain network that is resistant to hacking. However, the lack of regulation in the cryptocurrency market introduces dangers and uncertainties, such as the possibility of market manipulation, fraud, and money laundering².

Bitcoin, the first cryptocurrency, was designed as a decentralized digital currency that runs on a peer-to-peer network, allowing users to conduct transactions without the involvement of middlemen such as banks or other financial organizations³. It was built on blockchain technology, which enables secure and transparent

transaction recording. Because of Bitcoin's success, new cryptocurrencies such as Litecoin, Ripple, and Ethereum were created⁴.

At present, the total market value of the all-cryptocurrency market is in the billions of dollars, and technology is evolving and growing at a rapid pace, with new developments being invented all the time. "The global cryptocurrency market size was valued at \$1.49 billion in 2020 and is projected to reach \$4.94 billion by 2030, growing at a CAGR of 12.8% from 2021 to 2030⁵. In 2020, the Indian cryptocurrency industry was estimated to be worth roughly US\$150.214 million. Although India accounts for less than 2% of the global market, it is expected to grow significantly as a result of the recent Supreme Court ruling and growing customer awareness of the benefits of digital currencies ("India Cryptocurrency Market - Forecasts from 2022 to 2027", 2022)⁶.

In recent years, cryptocurrency has gained popularity in India. However, the regulatory climate surrounding cryptocurrencies in India has been unclear. The Reserve Bank of India (RBI) issued a circular in 2018 prohibiting financial and banking organizations from having any relationship with cryptocurrencies. This resulted in a major drop in bitcoin trading volume in India, as well as the closure of several cryptocurrency exchanges and companies. In March 2020, the Supreme Court of India declared the RBI's circular unlawful. This judgment has rekindled interest in cryptocurrencies in India, and

numerous cryptocurrency exchanges have restarted operations.

There have been very few studies on the monetary interconnectivity of cryptocurrencies and Indian fiat currencies. Related research,⁷⁻⁸⁾ mostly focused on global currencies and employed models that captured temporal information while ignoring important information about the frequency domain. Cryptocurrency, like any other money, must be able to efficiently keep its price value before it can function properly as a means of trade. The means to improve cryptocurrencies in the digital market are convenience and client satisfaction. Furthermore, client happiness is critical in investigating future development. Transparent and secure transactions are key factors in the Indian digital market⁹⁾.

Cryptocurrencies provide an innovative solution to the challenges associated with traditional fiat currency. Many scholars have investigated the discouraging aspects of cryptocurrencies such as perceived risk and security concerns¹⁰⁾ and lack of trust¹¹⁾ and government restrictions on cryptocurrency acceptance¹²⁾. Why do customers want to use cryptocurrency in such a potentially difficult scenario?¹³⁾

In India, access to cryptocurrencies is becoming simpler thanks to mobile platforms that use apps. It's critical to comprehend what motivates Indians to invest/trade cryptocurrencies and whether they would prefer replacing crypto with fiat currency.

Hence, the present study aims to examine the merits and demerits of crypto and fiat currency and the state of cryptocurrency adoption and prospects in India. The study also attempts to examine whether there can be a shift in the Indian Economy from Fiat money to cryptocurrency.

This paper divides the remaining paper into the following sections; Section Two explains the literature review and hypotheses, Section Three demonstrates the research methodology. Section Four emphasizes analysis, and Section five exhibits the findings & conclusion.

2 Review of Literature

Cryptocurrency is a creative new era of digital exchange based on cryptography to safeguard and manage transactions in the supply of digital currencies during circulation¹⁴⁾. Bitcoin was the first cryptocurrency block in history. Established in 2008 by an unknown individual known as "Satoshi Nakamoto" Forbes (2023)¹⁵⁾ estimated the presence of 22,932 cryptocurrencies in 2023, with a market valuation of \$1.1 trillion. The top five cryptocurrencies by market capitalization are Ethereum, Tether, Binance Coin, and USD Coin. Many countries, including the United States and Japan, are opposed. Others, like El Salvador, view cryptocurrency as a form of payment, a legal tender. The IMF reported in 2021 that cryptocurrencies hinder the capabilities of central banks to conduct effective monetary policy.

There are a few theories which explain the perceived behaviour of individuals towards technology, events, situations etc.

According to the theory of reasoned action (TRA), a choice is founded on the interaction of three variables: intents, attitudes, and beliefs¹⁶⁾. Also, there is another theory "theory of Planned Behavior (TPB)"¹⁷⁾, which suggests that an individual's attitude to act in a way is impacted by their intention towards the subjective norms, and perceived behavioural control, that predicts their actual behaviour. According to the Technology Acceptance Model (TAM)¹⁸⁾, users' favourable response to new technology is mainly caused by the perceived significance and convenience, which influence their attitudes and behaviour toward adopting the technology.

Thus, these theories explain how those three variables would influence one's behavior and decisions when confronted with a novel circumstance, such as the ability to utilize cryptocurrencies for financial transactions¹⁹⁾. Few researchers²⁰⁻²¹⁾ demonstrated that the combination of social influence, performance expectancy, enabling factors, and effort expectancy predicts the desire to adopt a novel technology. Gender, experience, and age are likely to modify the association between the desire to utilise technology and the four categories stated above²²⁾.

A study²³⁾ conducted in the past focused on assessing the impact of the digital revolution, particularly mobile banking and Fintech, on the microfinance industry in Bangladesh and concluded that while larger microfinance institutions (MFIs) like BRAC and Grameen Bank could integrate digital financial services, the smaller MFIs encountered challenges. A few studies researched crypto and its associated factors,²⁴⁾ enhanced the standard theoretical backdrop by incorporating new financial elements in the instance of readiness to utilize cryptocurrencies for financial transactions. They contended that financial knowledge, pricing value, perceived risk, and risk aversion levels are important predictors of willingness to utilize cryptocurrencies as a payment mechanism. A study conducted on crypto²⁵⁾ concluded that the number of individuals and organizations adopting cryptocurrencies remains relatively low because they compare crypto to other financial instruments and regard them as dangerous financial assets rather than a form of payment. Another study focused on the usage of cryptocurrencies as a payment mechanism is hampered by their volatility and lack of assurance. As per a study²⁶⁾ cryptocurrencies are seen as dangerous financial assets, limiting their usage as payment methods. Previous researchers²⁷⁻²⁸⁾ investigated the impact of Indian foreign exchange on cryptocurrency markets and found little impact which could be attributed to the lack of legal recognition by the government.

Based on past research and observations, researchers have also integrated a set of criteria that influence Bitcoin adoption, such as perceived risk, perceived trust, and PGC²⁹⁾. Because bitcoins are not utilized for transactions,

researchers opted not to include the "performance expectancy" component in this study³⁰⁾. According to one study³¹⁾ the lack of guarantee in the functioning of cryptocurrencies, price volatility, potential cyber fraud, and the lack of a robust regulatory framework cause investors to perceive them as risky financial tools, which may influence individual investment behaviour. As a result, "perceived risk" was deemed suitable to include in the study. Previous research work³²⁻³³⁾ demonstrated that trust is one of the most essential elements in Bitcoin adoption. The government is an essential component of the financial system, and its policies will determine cryptocurrency's future³⁴⁾. Thus, based on the voluminous literature, the following hypothesis has been framed.

2.1 Research Hypothesis

Hypothesis 1

H0- The benefits of cryptocurrencies and fiat currency do not outweigh the drawbacks of cryptocurrency and fiat currency.

H1- The benefits of cryptocurrency and fiat currency do outweigh the downsides of cryptocurrency and fiat currency

Hypothesis 2

H0- Fiat Currency Can't be replaced by Cryptocurrency in India

H1- Fiat Currency Can be replaced by Cryptocurrency in India

3 Research Methodology

Based on extensive literature, this study used a quantitative technique to uncover the factors influencing the acceptance of cryptocurrencies as a replacement for fiat money in India³⁵⁾. The study employed Descriptive Analysis, Factor Analysis and ANOVA to derive a meaningful outcome. The respondents' perception is tested by applying the Kruskal Wallis-H Test. The purpose of the study was to identify any potential problems in the structuring, phrase construction, reaction time, etc. The Cronbach's Alpha reported a value of 0.915, which is statistically considered satisfactory to assess the reliability of a test, and the findings strongly suggested that the tool holds the required reliability to carry out further research as given in Table 1.

3.1 Reliability Statistics

Table 1. Pilot Study.

Cronbach's Alpha	N of Items
.915	28
Reliability Analysis For each factor (Cronbach's Alpha)	
[Anonymity]	.886
[Low Transaction Cost]	.880
[International Acceptance]	.882
[Distributed Ledger]	.888

[[No Central Authority]	.892	
[No Intermediary]	.890	
[Exchange Risk]	.880	
[Theft and Hacking]	.885	
[Volatility]	.880	
[Expertise]	.887	
[No Central Authority]	.891	
[Greater control over the economy]	.883	
[Cost-efficient to produce]	.885	
[Convenient to use]	.883	
[Seigniorage]	.888	
[Provides flexibility]	.887	
[Not a foolproof way to protect the economy]	.883	
[Possibility of hyperinflation]	.880	
[Unlimited supply could create economic bubble]	.879	
[Economic volatility]	.882	
[Currency debasement]	.883	
Items	Cronbach's Alpha	N of Items
Advantages of Crypto	0.753	6
Disadvantages of Crypto	0.784	5
Advantages of Fiat Currency	0.756	5
Disadvantages of Fiat Currency	0.842	5

Source: Author Compilation using SPSS

3.2 Sample

The current research project incorporates probability sampling as all the stakeholders have an equal chance of representation in the data ascertainment stage. Further, stratified random sampling, used in this study, involves dividing the population into smaller groups that may differ significantly from one another. The study incorporates a sample using either random or systematic sampling from each subgroup. The final sample size is 460 respondents. The sample represents males (54%) and females (46%) and the majority of the respondents are young respondents (75% cumulative) who are below the age of 35 as given in Tables 3 and 4. Table 5 shows that approximately 66 percent of the respondents have a finance and technology background and hence the responses collected from them represent a fair opinion about the crypto future.

3.3 Factors

The factors incorporated in the study are the merits and demerits of cryptocurrencies over fiat currency as a replacement currency of Fiat currency. The relevant factors include perceived ease of use, perceived utility, perceived risk, social impact, financial literacy and awareness. Both perceived danger and utility are thought to be moderator factors.

4 Analysis and Results

CA (Cronbach's alpha) and CR (composite reliability) were used to assess the dependability of variables and

associated constructs (Table 1). Table 2 explains descriptive analysis and includes the analysis of the various descriptive measures of the target population like mean, median, mode, standard deviation, variance, skewness etc.

Table 2. Statistics Table Showing Descriptive of The Demographics.

Details	Gen	Age	Back ground	Cryptocurrency validation	Future of Crypto
N	460	460	460	460	460
Mean	1.5	2.5	2.1	2.3	2.4
Med	1	2	2	2	2
Std. D	.50	1.1	0.78	1.06	0.7
Var	0.25	1.3	0.62	1.13	0.49
Skew	0.16	0.03	-0.11	0.43	-0.63
Std. E	0.23	0.23	0.22	0.22	0.22
Kurt	2.01	1.4	-1.37	-1.02	-0.77

Source: Author Compilation using Excel

Table 3. Frequency Table of Gender.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	248	53.9	53.9	53.9
	Female	212	46.1	46.1	100
	Total	460	100	100	

Source: Author Compilation using Excel

Table 4. Frequency Table of Age.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-22	128	27.8	27.8	27.8
	23-28	104	22.6	22.6	50.4
	29-35	116	25.2	25.2	75.7
	35+	112	24.3	24.3	100.0
	Total	460	100.0	100.0	

Source: Author Compilation using Excel

Table 5. Frequency Table of Background.

		Frequency	Percent	Valid	Cumulative
Valid	Finance	128	27.8	27.8	27.8
	Technological	176	38.3	38.3	66.1
	Others	156	33.9	33.9	100.0
	Total	460	100.0	100.0	

Source: Author Compilation using Excel

Table 6. Future of Cryptocurrency in India in the Next 5 Years.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	As a new financial system	60	13.0	13.0	13.0
	As a Financial asset	176	38.3	38.3	51.3
	An addition to the existing Financial System	224	48.7	48.7	100.0
	Total	460	100.0	100.0	

Source: Author Compilation using Excel

Table 7. Method of Cryptocurrency Validation for Long-Term Sustainability.

	Frequency	Percent	Valid Percent	Cum Percent
Valid	Transactions via mining	132	28.7	28.7
	Transactions via holding certain number of coins	168	36.5	65.2
	Transactions via your identity and reputation	76	16.5	81.7
	Don't have an opinion	84	18.3	100.0
	Total	460	100.0	100.0

Source: Author Compilation using Excel

4.1 Descriptives of Demographic

The study incorporated 460 responses from the target population with almost equal distribution amongst the gender of respondents 248 male respondents and 212 female respondents, the target population is a normal curve with slight skewness reported at 0.16. The most reported background of the respondents was from a technological background. The count in finance background is limited due to a lack of potential knowledge for the gap. Almost 49% of the people think that cryptocurrency can be added to the current financial

system and cannot replace the existing system. 168 respondents out of 460 people believe that proof of stake or a certain number of coins is the major factor of validation for having a long-term sustainability (Tables 6 and 7).

Table 8. Reliability Analysis (Cronbach's Alpha Test)

Items	Cronbach's Alpha	N of Items
Advantages of Crypto	0.753	6
Disadvantages of Crypto	0.784	5
Advantages of Fiat Currency	0.756	5
Disadvantages of Fiat Currency	0.842	5

Source: Author Compilation using Excel

4.2 Reliability Analysis

Table 8 explained that Cronbach's Alpha was .753, .784, .756 and .842 respectively which is acceptable in social science research. According to a research report³⁶⁾ Cronbach's Alpha value of 0.6 or more indicates an acceptable level of consistency.

Table 9. Computed Variables (Cryptocurrency).

Items	Mean	Std. Error	Std. Dev	Variance	Kurtosis	Skewness
Advantages	2.498	0.075	0.804	0.756	-0.414	-0.471
Disadvantages	2.854	0.095	1.023	1.048	-0.931	-0.436

Source: Author Compilation using Excel

4.3 Descriptive study for Crypto and Fiat Currency

Table 9 displays the computed variables mean, standard error, standard deviation, variance, kurtosis, and Skewness of advantages and disadvantages of cryptocurrency. The result in the above table shows the

respondent's perspective with a mean of advantages 2.498 and a mean of disadvantages 2.854 which indicates that the disadvantages of cryptocurrency adoption outweigh the advantages of cryptocurrency adoption in India.

Table 10. Computed Variables (Fiat Currency).

Items	Mean	Std. Error	Std. Dev	Variance	Kurtosis	Skewness
Advantages	2.986	0.082	0.879	0.776	-0.359	-0.586
Disadvantages	2.821	0.089	0.955	0.915	-0.765	-0.388

Source: Author Compilation using Excel

Table 10 shows the result regarding fiat currency. The respondent's perspective with the mean of advantages 2.986 and a mean of disadvantages 2.821 which indicates

that the advantages of fiat currency outweigh the disadvantages of cryptocurrency adoption in India.

Table 11. Advantages of Cryptocurrency.

Statements	Mean	SD	4_HA	%	3_MA	%	2_LA	%	1_NA	%	T
[Anonymity]	2.82	0.914	27	23.50	52	45.20	24	20.90	12	10.40	460
[Low Transaction Cost]	3.19	0.897	54	47.00	34	29.60	22	19.10	5	4.30	460
[International Acceptance]	3.35	0.928	69	60.00	24	20.90	15	13.00	7	6.10	460
[Distributed Ledger]	2.90	0.882	29	25.20	55	47.80	21	18.30	10	8.70	460
[No Central Authority]	2.51	0.994	22	19.10	35	30.40	38	33.00	20	17.40	460
[No Intermediary]	2.72	1.013	30	26.10	40	34.80	28	24.30	17	14.80	460

Source: Author Compilation using Excel

Note- The terms HA, MA, LA, and NA denote High advantage, Moderate advantage, Low advantage and no advantage. Likewise, the terms HDA, MDA, LDA, and NDA denote high disadvantage, moderate disadvantage, low disadvantage and no disadvantage

4.4 Advantages and disadvantages of Crypto and Fiat Currency

Table 11 explains the benefits of cryptocurrency adoption in India and most of the respondents think that the replacement of fiat currency in India will increase the

acceptability of the currency in the international market which is mostly now dominated by the US dollar and will help in the increase of international trade. Also, this will help India get an edge over other countries. Respondent also believed that the anonymity of the people will help in the reduction of cybercrime as people might be able to make money as people are used to trap them now. Many respondents perceived that low transaction costs can be one of the reasons why cryptocurrency should be adopted as it will make India go onto the digital path and will help in the campaign of Digital India.

Table 12. Disadvantages of Cryptocurrency.

Statements	Mean	SD	4_HDA	%	3_MDA	%	2_LDA	%	1_NDA	%	T
[Exchange Risk]	2.79	1.01	34	29.60	38	33.0	28	24.3	15	13.0	460
[Theft and Hacking]	3.00	1.060	50	43.5	29	25.20	22	19.1	14	12.2	460
[Volatility]	2.96	1.021	43	37.4	38	33.00	20	17.40	14	12.20	460
[Expertise]	2.72	0.969	29	25.2	38	33.00	35	30.40	13	11.30	460
[Decentralised]	2.80	1.053	36	31.3	38	33.00	23	20.00	18	15.70	460

Source: Author Compilation using Excel

The above Table 12 explains the disadvantages of cryptocurrency adoption in India. One of the potential drawbacks of using cryptocurrencies is exchange risk. Exchange risk is the possibility of financial loss brought on by shifts in the exchange rate between two currencies. This risk exists in the case of cryptocurrencies because of

the market's turbulence. The company could lose money if the cryptocurrency's value significantly drops while being converted. Respondent also believed that the use of cryptocurrency may have serious drawbacks related to theft and hacking.

Table 13. Advantages of Fiat Currency.

Statements	Mean	SD	4_HA	%	3_MA	%	2_LA	%	1_NA	%	T
[Greater control over the economy]	2.94	0.985	40	34.80	40	34.80	23	20.0	12	10.40	460
[Cost-efficient to produce]	2.99	0.843	34	29.60	52	45.20	23	20.0	6	5.20	460
[Convenient to use]	3.17	0.920	54	47.00	33	28.70	22	19.0	6	5.20	460
[Seigniorage]	2.70	0.816	26	13.90	59	51.30	30	26.0	10	8.70	460

Source: Author Compilation using Excel

The above Table 13 explains the benefits of fiat currency in India and most of the respondents believe that the Fiat money has the benefit of enabling governments to exert more control over the economy. Governments can use monetary policy to affect economic activity by managing the money supply and interest rates. Respondent also believed Fiat money also has the benefit

of being relatively inexpensive to produce. As opposed to other types of currency, fiat currencies are typically created by central banks at a relatively low cost. Fiat currency production is a well-established process that can be easily scaled up or down to meet the demands of the economy. Many respondents perceived that one of the benefits of fiat currency is that it is easy to use.

Table 14. Disadvantages of Fiat Currency.

Statements	Mean	SD	4_HDA	%	3_MDA	%	2_LDA	%	1_NDA	%	T
[Frugal]	2.65	0.96	24	20.9	43	37.40	32	27.80	16	13.9	460
[Possibility of hyperinflation]	2.90	0.90	34	29.6	42	36.50	32	27.80	7	6.10	460
[bubble burst]	2.97	1.03	44	38.3	38	33.00	18	15.70	15	13.0	460
[Economic volatility]	2.84	0.96	32	27.8	46	40.00	24	20.90	13	11.30	460
[Currency debasement]	2.75	0.91	25	21.7	48	41.70	30	26.10	12	10.0	460

Source: Author Compilation using Excel

The above Table 14 explains the disadvantages of fiat currency in India. Fiat money has the drawback that it is not always effective at safeguarding the economy. Fiat money may be susceptible to inflation, which could lower its value and erode its purchasing power. Inflation can occur and hurt the economy if the government issues too much fiat money or if people lose faith in the currency. Respondent also believed that if the government prints too much fiat money, creating an oversupply of money, hyperinflation may result. Due to the excess supply of money, there may be a greater demand for goods and services, which could result in hyperinflation by causing prices to rise quickly, and it has the potential to drive down

the value of fiat money. Another drawback of fiat money which respondents felt is the potential for an economic bubble.

4.5 Non-Parametric Test (Kruskal Wallis H- Test for Cryptocurrency and Fiat Currency)

Table 15. (Kruskal Wallis H- Test for Background for Cryptocurrency).

Items	Finance		Technological		Others		KruskalWals &H-Test	
	Mean of Responses	Mean Rank	Mean of Responses	Mean Rank	Mean of Responses	Mean Rank	Chi- Square	P-Value
Advantages (Crypto)	2.498	51.56	2.913	59.71	2.497	61.35	2.506	0.385
Disadvantage (Crypto)	2.849	52.99	2.857	58.47	2.874	61.58	1.515	.867

Source: Author Compilation using SPSS

Table 16. (Kruskal Wallis H- Test for Background for Fiat Currency).

Items	Finance		Technological		Others		KruskalWals &H-Test	
	Mean Response	Mean Rank	Mean Response	Mean Rank	Mean Response	Mean Rank	Chi-Sq	P Value
Advantage (Fiat Currency)	2.97	57.4	2.98	58.4	2.96	57.9	1	0.04
Disadvantage (Fiat Currency)	2.87	55.3	2.82	59.6	2.84	58.3	1.1	0.44

Source: Author Compilation using SPSS

The results in Table 15 state that in the cryptocurrency table, the P-value of disadvantages is more significant than the P-value of advantages of cryptocurrency. Table 16 shows finance, tech, and other background people also agree that the challenges associated with Fiat currency are not much and it do not outweigh the benefits. The perception regarding the benefits of fiat currency is significantly different between the respondents since P value <.05.

The Kaiser–Meyer–Olkin MSA was 0.833. The three dimensions explained a total of 45.833 per cent of the variance among the items in the study. The Bartlett's Test of sphericity proved to be significant. Because three of the extracted variables were not significant in the previous test, we only analyzed 18 components this time, leaving us with just two factors that each account for a higher portion of the variability.

Table 17. Factor Analysis KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.829
Bartlett's Test of Sphericity Approx. Chi-Square	994.486
df	210
Sig.	<.001

Source: Author Compilation using SPSS

Table 17 gives the KMO findings. The results were significant, $\chi^2(n = 460) = 994.486$ ($p < 0.001$), which indicates its suitability for factor analysis. The Kaiser–Meyer–Olkin measure of sampling adequacy (MSA), which indicates the appropriateness of the data for factor analysis, was 0.829. In this regard, data with MSA values above 0.800 are considered appropriate.

4.6 Factor Analysis - Total Variance Explained

With 21 input variables, PCA initially extracts 21 factors (or “components”). Each component has a quality score called an Eigenvalue (Annexure1). Only components with high Eigenvalues are likely to represent real underlying factors. The 21 variables seem to measure 4 underlying factors. This is because only first 4 components have Eigenvalues of at least 1.2. The other components having low quality scores are not assumed to represent real traits underlying our 21 questions.

Table 18. Factor Scoring Table.

Components	N	Min	Max	Mean	Std Dev
Non-Acceptance of cryptocurrency as a Replacement of Fiat Currency	460	1	4	2.91	0.98
Acceptance of cryptocurrency as a Replacement of Fiat Currency	460	1	4	2.88	0.95

Source: Author Compilation using SPSS

This descriptive table shown in Table 18 concludes the “non-acceptance of cryptocurrency as a replacement of Fiat currency” is rated best (roughly 2.91 out of 4 points) and “Acceptance of cryptocurrency as a replacement of fiat currency” is rated worst (roughly 2.88 out of 4 points). Thus, factor analysis concludes that component 1 should be selected as it is a better option based on human perception and people are still confident in the use of Fiat currency rather than using cryptocurrency for making transactions. The Factor analysis shows that after reducing the number of factors it is observed that the mean of the advantages of fiat currency and disadvantages of cryptocurrency are more than the mean of advantages of cryptocurrency and disadvantages of fiat currency which shows that we are going to accept the null hypothesis and

depict that Fiat currency can't be replaced by cryptocurrency in India

5 Conclusion

This study set out to investigate the behavioral intention of respondents through perceived factors such as usefulness, ease of use, perceived risk and other factors about the willingness to adopt crypto as a replacement for fiat currency in India. Adopting crypto as a replacement for fiat is influenced by many factors such as ease of use and perceived usefulness. When the technology that supports the payment of cryptocurrencies is efficient and easy to use, consumers are likely to experience its benefits. According to a study³⁷⁾ there is a likelihood that someone may use cryptocurrencies to make payments if they are residing in a community that supports and uses them, has strong financial literacy, and are aware of new financial payment methods. However, the more a person believes cryptocurrencies are linked to financial dangers, the less likely they are to use them as a form of payment. Moreover, there are concerns raised about the carbon emissions of the crypto ecosystem³⁸⁾. The mining process is completely automated and to maintain a steady supply of Bitcoin in the market, the data minors mine it till the last of it is mined. Many view it as wasteful expenditure either way—hardware up gradation or while using older hardware which uses more electricity with diminishing returns. It also seems difficult to reconcile the need to make Bitcoin profitable while ensuring social and economic inclusion. The question of social solidarity by the Bitcoin network keeps fluctuating between two contradictory issues of making profits and social inclusion or welfare.

In India, Consumers are still not fully informed about the risks associated with using cryptocurrencies, though. In actuality, a lot of cryptocurrency forms are still ineligible for that level of trust. Numerous concerns, difficulties, and problems can be found on many cryptocurrency platforms, as was mentioned in the previous sections of this essay. Users should use cryptocurrency with additional caution until it is well maintained and well maintained.

This could be supported by the claim that the majority of people view cryptocurrencies as risky and avoid taking advantage of them unless they have a high level of financial literacy and reside in an environment that supports blockchain technology and the financial products that are derived from it³⁹⁾.

This study contends that raising financial literacy and knowledge of the value of cryptocurrencies is necessary to foresee their acceptance as other payment methods. Decision-makers should thus give more information about the possible advantages of cryptocurrencies before using them to replace fiat money.

This study demonstrates the significance of perceived financial risk on Indian consumers' readiness to accept cryptocurrencies. Customers in the future may view the usage of cryptocurrency as a dangerous form of money. This trust issue emphasizes the necessity for developers to

provide new encryption technologies that could defend against cyberattacks.

This study suffers from a few limitations such as small sample size, one country and limited statistical tools. Future researchers should conduct studies with a greater sample size and in other nations. Finally, given the growing significance of women and young people in blockchain technology and cryptocurrency trading, future research studies should take several moderator variables, such as demographic demographics, into account.

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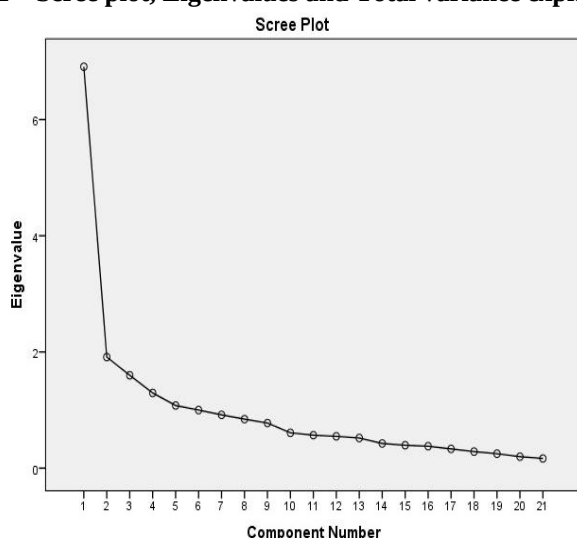
Annexure 1

1 Rotated Component Matrix

	Component			
	1	2	3	4
[Convenient to use]	.690			
[Cost-efficient to produce]	.679			
[Greater control over the economy]	.651			
[Provides flexibility]	.614			
[Seigniorage]	.584			
[Low Transaction Cost]	.513			
[International Acceptance] [Unlimited supply could create economic bubble]		.765		
[Possibility of hyperinflation]		.753		
[Economic volatility]		.737		
[Currency debasement]		.648		
[Not a fool proof way to protect the economy]		.631		
[Theft and Hacking]			.760	
[Volatility]			.675	
[Decentralised]			.655	
[Exchange Risk]			.654	
[Expertise]			.624	
[No Central Authority]				.773
[No Intermediary]				.714
[Anonymity]				.630
[Distributed Ledger]				.617

Extraction Method: Principal Component Analysis.

2 Scree plot, Eigenvalues and Total variance explained



3 Factor Analysis Findings.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.400	35.554	35.554	6.400	35.554	35.554	5.853	32.519	32.519
2	1.859	10.329	45.883	1.859	10.329	45.883	2.406	13.364	45.883
3	1.303	7.239	53.122						
4	1.262	7.011	60.133						
5	.943	5.241	65.374						
6	.852	4.733	70.107						
7	.783	4.351	74.458						
8	.656	3.645	78.104						
9	.610	3.391	81.495						
10	.583	3.241	84.736						
11	.525	2.917	87.653						
12	.444	2.466	90.119						
13	.406	2.255	92.374						
14	.381	2.119	94.493						
15	.345	1.918	96.411						
16	.258	1.434	97.846						
17	.216	1.198	99.043						
18	.172	.957	100.000						

Extraction Method: Principal Component Analysis.

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.909	32.902	32.902	6.909	32.902	32.902	3.291	15.674	15.674
2	1.912	9.104	42.006	1.912	9.104	42.006	3.151	15.005	30.679
3	1.598	7.612	49.618	1.598	7.612	49.618	2.839	13.518	44.197
4	1.294	6.164	55.782	1.294	6.164	55.782	2.433	11.585	55.782
5	1.078	5.133	60.915						
6	1.000	4.762	65.677						
7	.917	4.368	70.045						
8	.844	4.018	74.063						
9	.776	3.698	77.760						
10	.608	2.895	80.656						
11	.568	2.703	83.359						
12	.548	2.608	85.967						
13	.519	2.474	88.440						
14	.425	2.023	90.463						
15	.395	1.881	92.344						
16	.378	1.801	94.145						
17	.331	1.578	95.723						
18	.285	1.355	97.078						
19	.249	1.186	98.264						
20	.198	.942	99.206						
21	.167	.794	100.000						

Extraction Method: Principal Component Analysis.